



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,698	05/30/2006	Jens Brandt	S4-03P09159	9692

24131 7590 11/17/2008
LERNER GREENBERG STEMER LLP
P O BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER

VORTMAN, ANATOLY

ART UNIT	PAPER NUMBER
----------	--------------

2835

MAIL DATE	DELIVERY MODE
-----------	---------------

11/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/566,698	Applicant(s) BRANDT ET AL.	
	Examiner ANATOLY VORTMAN	Art Unit 2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/7/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Reply Under 37 CFR 1.111

1. The Applicant's reply filed on 10/02/2008 to the non-final Office action of 07/03/08 is acknowledged. Claim 21 has been amended and new claims 24 and 25 have been added. Claims 12-25 are pending in the instant application. The Office action follows:

Information Disclosure Statement

2. The information disclosure statement filed 10/07/08 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each document listed that is not in the English language. The NPL document: "Japanese Office Action dated September 5, 2008" lacks English translation. It has been placed in the application file, but the information referred to therein has not been considered and the reference has been crossed through.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2835

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

US/2002/0112870 to Kobayashi et al (Kobayashi) in view of EP/0,854,666 to Lochbrunner et al.

(Lochbrunner) (both references cited in IDS) and further in view of US/2001-0017766 to

Murowaki et al (Murowaki).

Regarding claims 12-14, and 21-25, Kobayashi disclosed (Fig. 1) an electronic unit (control device for motor vehicle (see section [0003])), comprising: a printed circuit board (2) having a central region populated with electronic components (see section [0040]), and an edge region adjoining said central region (inherently); a housing (4) enclosing said printed circuit board, said housing having a housing floor (5) and a housing cover (8) connected to said housing floor, said housing floor, when viewed in cross-section, having at least one indentation (Fig. 6) and housing internal lateral sections (52, 53); said central region of said printed circuit board being disposed spaced apart from said housing and said edge region being connected to said housing internal lateral sections via a heat-conducting adhesive layer (9) (Fig. 4) (the adhesive inherently will conduct heat); said housing cover having an edge formed with an annularly continuous projection (84) engaging into a corresponding groove (59) formed in said housing floor, said projection and said groove together forming a groove-and-projection connection and being glued to one another, but did not explicitly stated that the electronic components are disposed on both sides of the circuit board and that the same heat conductive adhesive is used to mount the circuit board to the housing of the electronic unit, wherein said housing internal lateral

sections (52, 53) dissipate heat away from said printed circuit board (2) (inherently) and serve as main support for said printed circuit board (2).

Lochbrunner shows conventionality of placing electronic components on both sides of the circuit board (see last two (2) lines of the translated abstract).

It would have been obvious to a person of the ordinary skill in the relevant art at the time of the invention to dispose the electronic components on both sides of the printed circuit board (2) of Kobayashi device, as taught by Lochbrunner, in order to reduce the required surface area of the printed circuit board, and subsequently, to reduce the size of the device.

Further, Murowaki disclosed that a heat conductive adhesive is used to mount the circuit board to the housing of the electronic device in order to enhance the conduction of heat (see section [0062]).

It would have been obvious to a person of the ordinary skill in the relevant art at the time of the invention to mount the circuit board to the housing of the electronic unit in the device of Kobayashi via a heat conductive adhesive, as taught by Murowaki, in order to reduce the thermal resistance between the circuit board and the housing, thus enhancing the cooling of the Murowaki device. It would have been also obvious to substitute said adhesive (9) in the Kobayashi- Lochbrunner combination, in order to reduce the thermal resistance between the housing cover (8) and the housing floor (5), thus enhancing the cooling of the electronic unit.

Regarding claim 21-24, the method steps recited in the claims are inherently necessitated by the device structure of Kobayashi as modified by Lochbrunner and Murowaki.

Regarding claims 15 and 16, Kobayashi disclosed (Fig. 5) at least one plug connector (3) integrated in said housing cover (8) for electrically connecting said electronic unit, wherein said

Art Unit: 2835

plug connector (3) includes terminal pins (not labeled) running straight to said printed circuit board (2) and forming direct contact with said printed circuit board.

Regarding claim 17, Kobayashi as modified by Lochbrunner and Murowaki disclosed all, but did not explicitly stated that said terminal pins contact said circuit board via press-in contacts.

Since the technique of using the press-in contacts has been well known and widely used in the relevant arts at the time of the invention to improve upon similar electronic devices, it would have been obvious to a person of the ordinary skill in the art to apply the aforementioned known technique to interconnect the terminal pins and the printed circuit board in the Kobayashi-Lochbrunner –Murowaki combination. The modification would have yield predictable benefits (i.e. reduced cost and time of the assembly process due to the avoidance of the step of soldering) and would have been obvious to a person of the ordinary skill to try with reasonable expectation of success. *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727 (2007).

Regarding claims 18-20, Kobayashi as modified by Lochbrunner disclosed that said edge region is a printed circuit board section running along a large part of an edge of said printed circuit board in an annularly continuous manner (see Fig. 1 of Kobayashi or Lochbrunner), wherein said edge region has first side at least partly populated with the electronic components (see Fig. 1 of Lochbrunner), and a second side connected with said heat-conducting adhesive layer (see Fig. 4 of Kobayashi).

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive. The gist of the Applicant's arguments is that, allegedly, "Kobayashi et al. however, do not teach a housing floor having an indentation, but rather teach a flat housing floor as can be seen in Fig. 1".

Contrary to the Applicant's position, Examiner would like to direct the Applicant's attention to the annotated Fig. 5 and 6 below, which clearly show the indentation in the floor (5):

FIG. 5

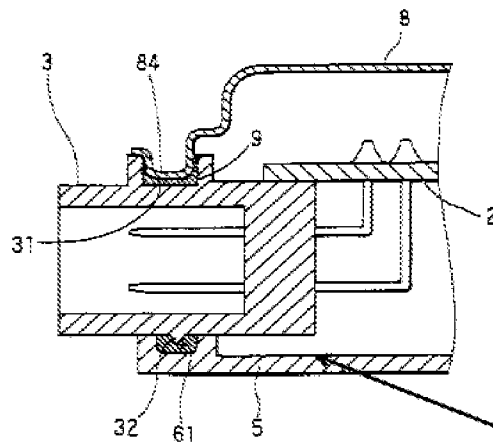
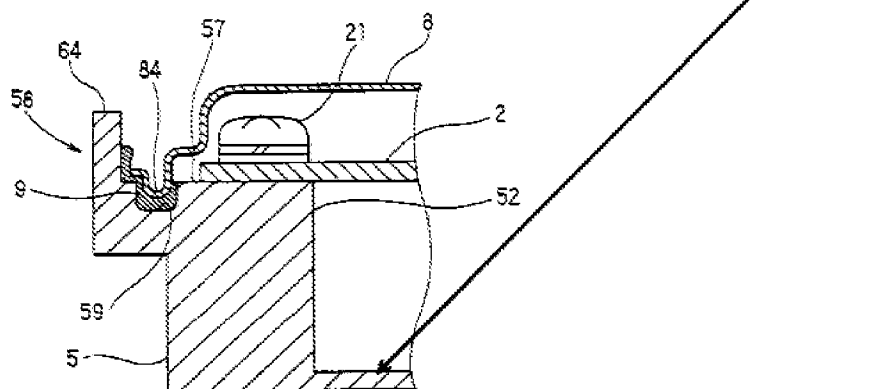


FIG. 6



The housing floor is the entire element (5), including the protruding internal lateral sections (52, 53). Therefore, the low laying surface area surrounded by said protruding lateral sections (52, 53) is the “indentation” in said floor.

Furthermore, Applicant contends that “Murowaki et al. do not teach housing internal sections that dissipate heat away from the printed circuit board and that serve as the main support for the printed circuit board”. This argument is irrelevant. The Murowaki et al reference has been used only because of the teachings of the heat conductive adhesive. It is the primary reference (US/2002/0112870 to Kobayashi et al) teaches the internal lateral sections (52, 53), which dissipate heat (inherently) from the printed circuit board (2) and serve as the main support for said circuit board (2) (see Fig. 6).

In view of the above, the rejection is hereby maintained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANATOLY VORTMAN whose telephone number is (571)272-2047. The examiner can normally be reached on Monday-Thursday, between 10:00 am and 8:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jayprakash Gandhi can be reached on 571-272-3740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anatoly Vortman/
Primary Examiner, Art Unit 2835